

REMARKS

The claims have been amended. Claim 12 has been rewritten, claim 11 is canceled, and two new claims, claim 13 and 14, are added. Claims 1-10 and 12-14 are now in the application.

Reconsideration of this application is respectfully requested.

Requirement for an Abstract and Objection to the Disclosure:

A substitute specification is supplied in this response. It differs from the original by the following additions:

1. A title has been added
2. A Background section heading has been added.
3. A Brief Summary of the Figures section heading has been added.
4. A Detailed Description of the Drawings section heading has been added.
5. An introduction to the claims has been added.
6. An Abstract of the Disclosure has been added.

No new matter has been added in the substitute specification. Applicants believe this overcomes Examiner's rejection of and objection to the application.

Claim Rejections - 35 U.S.C. § 103(a):

Claims 1, 2, and 7 were rejected under 35 U.S.C. § 103 as being unpatentable over Blackwell et al. (US 5,671,251A) in view of Ayanoglu et al. (US 5,528,625)

Applicants respectfully traverse Examiners rejection of claims 1, 2 and 7.

Claim 1

Blackwell et al. describes a device that "...may be selectively configured by the user to operate in any one of a plurality of modes, namely, as an analog modem, as a digital modem, or as a terminal adapter." (col. 5, lines 33-36) When operated as an analog modem, "From the analog interface circuit 314, the modulated analog signal may then be transmitted via line 306 through the first communications network shown in FIG. 4 as PSTN 126, and in this mode, the data communications device 300 is operating in a first mode as an analog modem." The analog modem can presumably transmit and receive analog signals, as evidenced by the statement at col. 7, lines 15-16: "The first interface circuit such as the analog interface circuit 314 ... may include hybrid circuitry to transfer information from two sets of twisted pair transmission lines to one pair of transmission lines."

In a second mode of operation, the device of Blackwell et al. operates as a digital modem. In this mode, "The second or digital interface circuit 318 is coupleable to a second communications network, shown in FIG. 4 as digital network 228, and processes the digital modem signal for transmission over the second (digital) network. For example, the digital interface circuit may act as a time division multiplexer to place the digital modem signal, having a DSO [the standard digital signal, level 0, defined for PSTN's] format, in the appropriate digital channel or time slot." This digital modem can transmit signals over a PSTN having one digital interface to another device that is either another digital modem coupled to a digital PSTN interface, or to another device that is an analog modem coupled to an analog PSTN interface.

The modem described by Ayanoglu is designed to be coupled to the PSTN by analog lines at both ends of the network (FIG. 7, lines 217 and 219, col. 11, line 39). Thus, when

Ayanoglu's modem is combined with Blackwell's modem, the descriptions would teach or motivate the use of two Blackwell et al./Ayanoglu et al. combined devices that are operated in the analog mode, so as couple analog phone lines to both the modem transmitter and receiver.

Applicants' device, however is designed such that a digital adapter (FIG. 3) and analog adapter (FIG. 4) communicate to each other, which Blackwell does not provide for.

Thus, Blackwell et al. in combination with Ayanoglu clearly teaches away from applicant's claimed invention.

For this reason, applicant believes that claim 1 is patentable over the combination of Blackwell et al. and Ayanoglu et al., or any of the cited arts taken either singly or in any combination.

Claims 2 and 7

Applicant believes that claims 2 and 7 are patentable, inasmuch as they ultimately depend upon claim 1.

Claim Rejections - 35 U.S.C. § 103(a):

Claims 3, 8, 9, and 10 were rejected under 35 U.S.C. § 103 as being unpatentable over Blackwell et al. (US 5,671,251A) in view of Ayanoglu et al. (US 5,528,625) and further in view of Herzberg et al. (US 5,710,790).

Claim 3

Applicant believes that claims 3 is patentable inasmuch as it depends upon claim 1, which applicant believes is patentable for the reasons stated above.

Notwithstanding the fact that applicant believes that claim 3 is patentable for the reasons stated with reference to applicant's arguments for claim 1, applicant believes that claim 3 is patentable on its own merits. In particular, applicants note that claim 3 states that applicant's device is: "able to transmit, to a digital receiver (12) situated in the digital adapter (5), an analog signal such that, when it is sampled by the analog interface of the exchange (4), it will equate

the sum of a value able to be determined by the digital information item transmitted by the analog adapter (6) to the digital adapter (5) and of the echo of the signal transmitted by the digital adapter (5), without the said value having to be equal to a level of the quantization law." (The underline for emphasis has been added.) Thus, the "said value" (which is determined by the digital information item) is not necessarily selected by the analog adaptor to have value equal to a level of the quantization law used in a telephone system.

This is patentably distinguishable from Ayanoglu's and Herzberg's teachings, which are that the value of the analog signal transmitted is arranged so as to equate to a level of the quantization law. (Ayanoglu col. 2, lines 43-47; Col. 7, lines 41-48; Herzberg col. 2, lines 45-47, col. 3, lines 6-9).

Applicant believes that claim 3, and therefore also that claim 8, claim 9, and claim 10 when dependent on claim 3, are patentable for this additional reason, over the combination of Blackwell et al., Ayanoglu et al., and Herzberg et al., or any of the cited arts taken either singly or in any combination.

Claim 8

Notwithstanding the fact that applicant believes that claim 8 is patentable for the reasons stated with reference to applicant's arguments for claims 1 and 3, applicant believes that claim 8 is patentable on its own merits. In particular, applicant note that claim 8 states that applicant's device includes a line coder (27) followed by a predistortion filter (24) which synthesizes a partial response, in particular a class IV response. The applicant does not find reference to partial response in either of Blackwell, Ayanoglu, or Herzberg.

Applicant believes that claim 8 and therefore also claim 9, are patentable for this additional reason, over the combination of Blackwell et al., Ayanoglu et al., and Herzberg et al., or any of the cited arts taken either singly or in any combination.

Claim 9

Notwithstanding the fact that applicant believes that claim 9 is patentable for the reasons stated with reference to applicant's arguments for claims 1, 3, and 8, applicant believes that claim 9 is patentable on its own merits. In particular, applicants notes that claim 9 states that said partial response is determined adaptively.. The applicant does not find reference to partial response in either of Blackwell, Ayanoglu, or Herzberg.

Applicant believes that claim 9 is patentable for this additional reason, over the combination of Blackwell et al., Ayanoglu et al., and Herzberg et al., or any of the cited arts taken either singly or in any combination.

Claim 10

Notwithstanding the fact that applicant believes that claim 10 is patentable for the reasons stated with reference to applicant's arguments for claims 1, and 3, applicant believes that claim 10 is patentable on its own merits. In particular, applicant notes that claim 10 states "the digital adapter (5) includes a decoder (30) connected, at its input, to an echo filter (22) and to the output of the digital interface of the digital adapter (5), said decoder (30) delivering at its output to the user's equipment (9) the most likely sequence of groups of bits transmitted by the analog adapter (6), given the echo of the signal produced by the digital adapter (5)." Thus, the decoder (30) produces a most likely sequence of groups of bits transmitted by the analog adaptor (6).

In contrast, Herzberg et al. (FIGS. 2 and 9) uses a subtraction (13) to combine the output of the echo canceller (14) and the output of the digital interface (10), with the resulting signal being decoded (60, FIG. 9) after another quantization (20) as is done in Herzberg et al.

Applicant believes that claim 10 is patentable for this additional reason, over the combination of Blackwell et al., Ayanoglu et al., and Herzberg et al., or any of the cited arts taken either singly or in any combination.

Claim Rejections - 35 U.S.C. § 103(a):

Claims 4, 5, and 6 were rejected under 35 U.S.C. § 103 as being unpatentable over Blackwell et al. (US 5,671,251A) in view of Ayanoglu et al. (US 5,528,625) and further in view of Eyuboglu et al. (US 5,159,610).

Claim 4

Applicant believes that claim 4 is patentable inasmuch as it depends upon claim 1, which applicant believes is patentable for the reasons stated above.

Notwithstanding the fact that applicant believes that claim 4 is patentable for the reasons stated with reference to applicant's arguments for claim 1, applicant believes that claim 4 is patentable on its own merits. In particular, applicants note that claim 4 states that applicant's device operates such that "...the response at the output of the adaptive linear equalizer is a partial response, in particular a class IV response." Examiner states that "Eyuboglu's receiver consists of an A/D converter connected to an adaptive equalizer (See Figure 8, references 109, 108, 110)." Applicant notes that one of ordinary skill in the art would realize from analyzing Eyuboglu's description that a partial response is not described as being generated at the output of Eyuboglu's adaptive equalizer; rather that the output of the adaptive equalizer of Eyuboglu is an idealized output and that a partial response is generated instead at the output of Eyuboglu's prediction filter.

Applicant believes that claim 4, and therefore also that claim 5, are patentable for this additional reason, over the combination of Blackwell et al., Ayanoglu et al., and Eyuboglu, or any of the cited arts taken either singly or in any combination.

Claim Rejections - 35 U.S.C. § 103(a):

Claim 11 was rejected under 35 U.S.C. § 103 as being unpatentable over Blackwell et al. in view of Herzberg et al. over Ayanoglu et al.

Claim 11 is canceled, rendering its rejection moot.

Claim Rejections - 35 U.S.C. § 103(a):

Claim 12 was rejected under 35 U.S.C. § 103 as being unpatentable over Blackwell et al. in view of Herzberg et al. over Ayanoglu et al.

Claim 12 is amended to clarify a possible ambiguity and not in response to any reason given for rejection or other patentability issue.

Applicant believes that claim 12 is patentable for the same reasons stated above for claims 1 and 3.

New Claim 13

Applicant believes that new claim 13 is patentable in view of any of the prior art cited in this application, taken either singly or in combination.

Applicant notes that any amendments or claim cancellations made herein and not substantively discussed above are made solely for the purposes of more clearly and particularly describing and claiming the invention, and not for purposes of overcoming art. The Examiner should infer no (i) adoption of a position with respect to patentability, (ii) change in the applicant's position with respect to any claim or subject matter of the invention, or (iii) acquiescence in any way to any position taken by the Examiner, based on such amendments or cancellations not substantively discussed. Furthermore, any remarks made herein with respect to a given claim or amendment are intended only in the context of that specific claim or amendment, and should not be applied to other claims, amendments, or aspects of applicant's invention.

Applicant specifically reserves the right to prosecute claims of differing and broader scope than those presented herein, in a continuation application.

Accordingly, this application is believed to be in proper form for allowance and an early notice of allowance is respectfully requested.

Please charge any fees associated herewith, including extension of time fees, to
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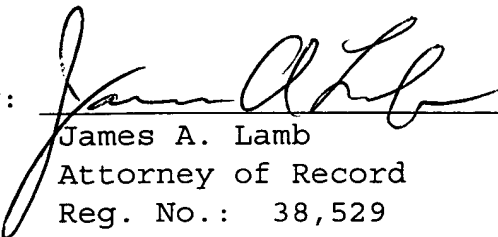
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Respectfully submitted,

By:

A handwritten signature in dark ink, appearing to read "James A. Lamb", is written over a horizontal line.

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